

**WEST**

Generate Collection

L17: Entry 4 of 57

File: USPT

Oct 24, 2000

US-PAT-NO: 6136320

DOCUMENT-IDENTIFIER: US 6136320 A

TITLE: Vaccines expressed in plants

DATE-ISSUED: October 24, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP	CODE	COUNTRY
Arntzen; Charles Joel	The Woodlands	TX	N/A		N/A
Lam; Dominic Mah-Kit	The Woodlands	TX	N/A		N/A

US-CL-CURRENT: 424/204.1; 424/223.1, 424/225.1, 424/227.1,  
424/725

## CLAIMS:

What is claimed is:

1. An orally acceptable immunogenic composition comprising unpurified or partially purified recombinant viral immunogen expressed in a plant, wherein said immunogen is expressed in the plant at a level such that upon oral administration of said composition to an animal, an immunogenic response is observed.
2. The vaccine of claim 1 wherein said immunogen is capable of generating an immunogenic response when the immunogen interacts with a mucosal membrane.
3. The vaccine of claim 1 wherein the immunogen is capable of binding a glycosylated molecule on the surface of a membrane of a mucosal cell.
4. The vaccine of claim 1 wherein said immunogen is a chimeric protein.
5. The vaccine of claim 1 wherein said immunogen is an immunogen derived from a hepatitis virus.
6. An orally acceptable immunogenic composition comprising unpurified or partially purified recombinant viral immunogen expressed in a plant, wherein said immunogen is expressed in the plant at a level such that upon oral administration of said composition to an animal, an immunogenic response is observed, said viral immunogen being an immunogenic protein from a virus selected from the group consisting of transmissible gastroenteritis virus and hepatitis virus.
7. A vaccine comprising a immunogen of hepatitis virus expressed in a plant, wherein said immunogen is capable of binding a glycosylated molecule on a surface of a membrane mucosal cell.
8. A plant composition comprising a viral antigen which triggers

production of antibodies and which is derived from a hepatitis B virus surface antigen or transmissible gastroenteritis virus spike protein, and plant material; said antigen being a product produced by the method of expressing said immunogen in a transgenic plant, said plant material being in a form chosen from the group consisting of a whole plant, plant part, or a crude plant extract.

9. An anti-hepatitis B vaccine comprising the composition of claim 8 wherein said antigen is derived from hepatitis B virus surface antigen.

10. An anti-transmissible gastroenteritis vaccine comprising the composition of claim 8 wherein said antigen is derived from transmissible gastroenteritis virus spike protein.